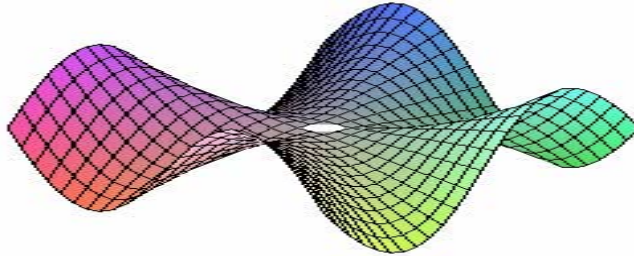
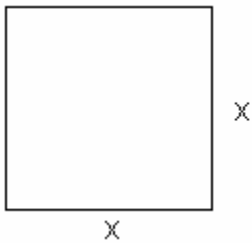


MA 104 INTRODUCTORY ALGEBRA
-A JUST IN TIME APPROACH-
PRACTICE TEST SIX

Sections: 8.1, 8.2, 8.4, 8.5, 8.6.



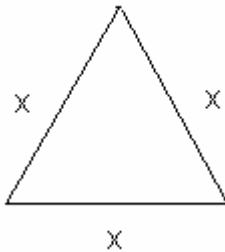
1. Each shape has an area of 18 square feet. What is the length of x in each case? [8.1]
a) Square with side x :



- b) Area of a triangle is:

$$A = \frac{x^2 \sqrt{3}}{4}$$

Equilateral triangle:

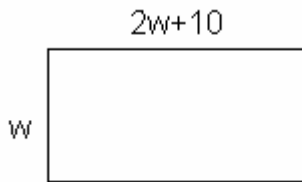
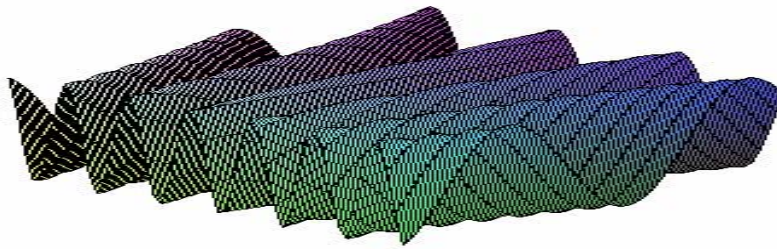


Which of the sets of three numbers in Exercise 2-3 could represent the sides of a right triangle? [8.1]

2. {12, 15, 18}
3. {9, 40, 41}

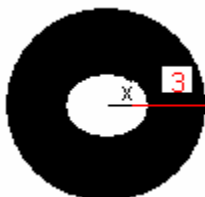
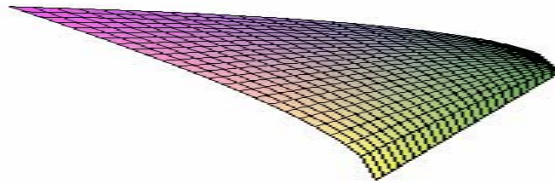
In exercise 4-5 solve for the side (s) marked with a variable in each figure. [8.1]

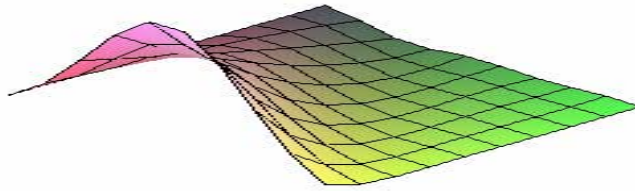
4. The area is 2100 square feet.



5. The shaded area of the two circles is 36cm^2 .

Not drawn to scale





Simplify the radical expressions in Exercise 6-7. [8.1]

6.

a) $-\sqrt{196}$

b) $\sqrt{-196}$

7. a) $\sqrt{3y} \sqrt{27y}$

b) $-\sqrt{169y^2}$

c) $\sqrt{169(-y)^2}$

d) $\sqrt{\frac{225}{y^2}}$

For each pair of points in Exercise 8-9,

a) Find the slope of the line segment connecting the two points.

b) Find the equation of the line passing through the points.

c) Find the distance between the two points. [8.2]

8. $(-2,0), (4,8)$

9. $(2,3), (1,3)$

10. Evaluate the expressions without a calculator. [8.2]

a) $(1 / 16)^{1 / 2}$

b) $(1 / 16)^{0.5}$

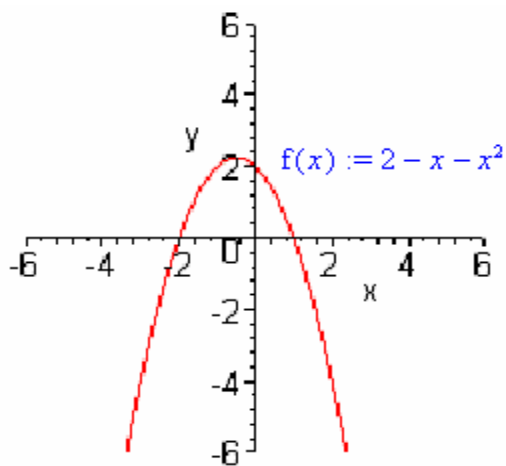
c) $(1 / 16)^0$

d) $(1 / 16)^{-1}$

e) $(0.36)^{0.5}$

f) $(0.125)^{-1}$

11. Find the x- and y-intercept points, axis of symmetry, and vertex for the following parabola shown. [8.4]



12. Name a, b, and c. [8.4]

$$x^2 = 3 - x$$

13. Solve the equation:

a) $2 - x - x^2 = 2$ [8.4]

b) $2 - x - x^2 = 4$

Solve the equations in exercise 14-16. [8.5]

14. $x^2 = 3$

15. $64x^2 = 25$

16. $\frac{x}{8} = \frac{2}{x}$

17 – 21. Solve by factoring. [8.5]

$$17) x^2 - 25 = 0$$

$$18) x^2 - 6 - x = 0$$

$$19) 5x^2 - x = 0$$

$$20) 10x^2 - 3 = x$$

$$21) \frac{3}{x-4} = \frac{x+1}{2}$$

22. Simplify the expressions without using a calculator. [8.5]

$$a) x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(2)(1)}}{2(2)}$$

$$b) x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(2)(2)}}{2(2)}$$

Solve the equations with the quadratic formula. [8.6]

$$23. 4x^2 - 3 = 2x$$

$$24. -16t^2 + 30t + 150 = 200$$

Answers:

1a) $3\sqrt{2}$ ft; b) 6.447 ft.

2. {12,15,18}; No; 3 {9,40,41}; yes

4. Width = 30 ft, length = 70 ft

5) $x \approx 0.4$ km 6a) -14; b) No solution

7a) $9y$; b) $-13y$; c) $-13y$; d) $\pm \frac{15}{y}$

8a) Slope = $\frac{4}{3}$

b) $y = \frac{4x}{3} + \frac{8}{3}$

c) Distance = 10

9a) slope = 0; b) $y = 3$; c) Distance = 1

10a) $\frac{1}{4}$; b) $\frac{1}{4}$; c) 1; d) 16; e) 0.6; f) 8

11) (-2,0), (1,0); (0,2); $x = -0.5$; (-0.5, 2.25)

12. a = 1, b = 1, c = -3.

13a) $x = -1$, $x = 0$; b) No real number solution.

14) $x = \pm\sqrt{3}$; 15) $x = \pm\frac{5}{8}$; 16) $x = \pm 4$; 17) $x = \pm 5$; 18) $x = 3, -2$.

19) $x = 0$, $x = \frac{1}{5}$

20) $x = \frac{-1}{2}$, $x = \frac{3}{5}$

21) $x = 5$, $x = -2$; 22a) $x = \frac{4 \pm \sqrt{8}}{4}$ or 1.707; b) $x = \frac{1 \pm \sqrt{-15}}{4}$
or 0.293

23) $x = \frac{1 \pm \sqrt{13}}{4}$, 24) No real number solution